

WHAT IS CLAIMED IS:

1. An image processing apparatus for performing color adjustment for image data, comprising:

designating means for designating, as parameters,
5 a reference color, an adjusted color of the reference color, and an adjustment region in a color space;

region determining means for determining whether input image data is in the adjustment region; and

adjusted value calculating means for calculating
10 an adjusted value of the image data on the basis of the parameters, if said region determining means determines that the image data is in the adjustment region.

2. The apparatus according to claim 1, wherein the adjustment region is defined as a geometric figure in
15 the color space.

3. The apparatus according to claim 2, wherein the geometric figure is an ellipsoid.

4. The apparatus according to claim 2, wherein the geometric figure is a polyhedron.

20 5. The apparatus according to claim 1, wherein said adjusted value calculating means calculates the adjusted value of the image data on the basis of an intersection of a straight line which connects the reference color and the image data, and the contour of
25 the adjustment region.

6. The apparatus according to claim 5, wherein said adjusted value calculating means calculates the

adjusted value of the image data such that the adjustment amount linearly changes with respect to a distance between the image data and the reference color in the color space.

5 7. The apparatus according to claim 5, wherein said adjusted value calculating means calculates the adjusted value of the image data such that the adjustment amount nonlinearly changes with respect to the distance between the image data and the reference
10 color in the color space.

8. The apparatus according to claim 1, wherein the image data is an element of a correction table for color matching.

9. The apparatus according to claim 8, further
15 comprising coordinate transforming means for transforming the image data into the coordinate system of a predetermined color space,

wherein said region determining means and said adjusted value calculating means each perform
20 operations on the image data transformed into the predetermined color space.

10. The apparatus according to claim 9, wherein said designating means designates the parameters as values in said predetermined color space.

25 11. The apparatus according to claim 9, wherein said coordinate transforming means inversely transforms the adjusted value, in the predetermined color space,

calculated by said adjusted value calculating means,
into the color space coordinate system of the image
data.

12. The apparatus according to claim 11, wherein said
5 coordinate transforming means performs affine
transformation and inverse transformation thereof.

13. The apparatus according to claim 9, further
comprising:

transformation matrix calculating means for
10 calculating, on the basis of the parameters, a
transformation matrix used by said coordinate
transforming means; and

matrix storage means for storing the
transformation matrix.

15 14. The apparatus according to claim 9, wherein
said region determining means further determines
that image data is inside a rectangular parallelepiped
region containing the adjustment region in the color
space, and

20 if said region determining means determines that
the image data is inside the rectangular parallelepiped
region, said coordinate transforming means transforms
the coordinates of the image data.

15. An image processing method of performing color
25 adjustment for image data, comprising:

the designation step of designating, as
parameters, a reference color, an adjusted color of the

reference color, and an adjustment region in a color space;

the region determination step of determining whether input image data is in the adjustment region;

5 and

the adjusted value calculation step of calculating an adjusted value of the image data on the basis of the parameters, if it is determined in the region determination step that the image data is in the adjustment region.

16. An image processing system for performing color matching based on a color correction table in an image processing apparatus in which a monitor and a printer are connected, wherein said image processing apparatus comprises:

designating means for designating, as parameters, a reference color, an adjusted color of the reference color, and an adjustment region in a color space;

region determining means for determining whether image data which is an element of the color correction table is in the adjustment region; and

adjusted value calculating means for calculating an adjusted value of the image data on the basis of the parameters, if said region determining means determines that the image data is in the adjustment region.

17. A program which performs color adjustment for image data and can be executed on a computer,

comprising:

a code of the designation step of designating, as parameters, a reference color, an adjusted color of the reference color, and an adjustment region in a color

5 space;

a code of the region determination step of determining whether input image data is in the adjustment region; and

10 a code of the adjusted value calculation step of calculating an adjusted value of the image data on the basis of the parameters, if it is determined in the region determination step that the image data is in the adjustment region.

18. A recording medium recording the program
15 according to claim 17.